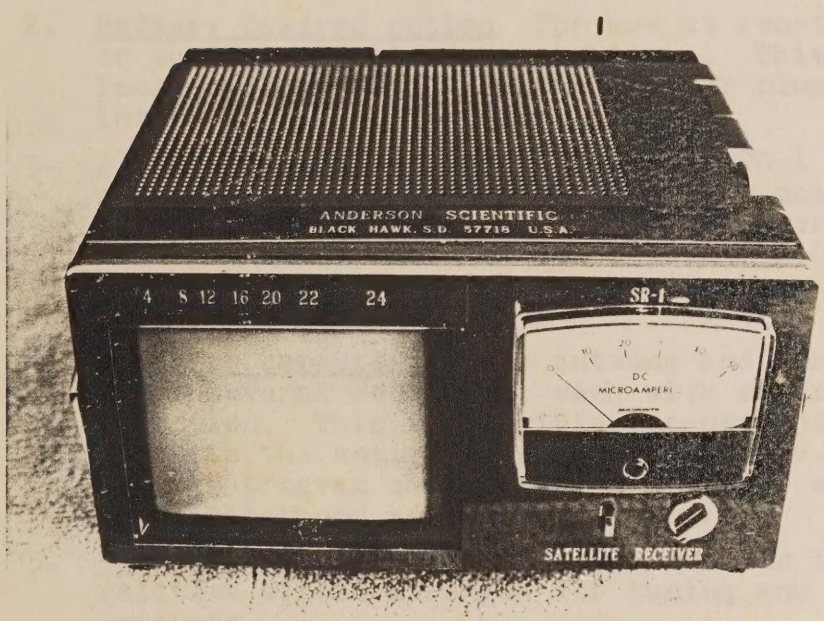
SR-1 SATELLITE RECEIVER
INSTALLATION INSTRUCTIONS



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The Anderson SR-1 Satellite Receiver and SC-1 Satellite Converter were designed in 1980. At that time they were the only units available with the following combination of features :

1. A Built in monitor For observation of the received picture and sound.
2. Battery powered option For use at remote locations or during portable demonstrations. This option includes both an auto cigar lighter plug and internal flashlight cells.
3. All Channel conversion The unique SC-1 remote converter mounts directly on the low noise amplifier at the receiving antenna. It is powered through low cost cable with "F" connectors. D.C. power passes through the SC-1 to operate the low noise amplifier.
4. Multiset capability One antenna and converter will serve several receivers, each with separate channel selection. This is possible because the SC-1 converts the entire satellite band to U.H.F., and permits program choice for each viewer with motel or neighborhood systems.
5. Signal metering The large panel meter indicates relative signal strength for tuning and homing antennas.
6. Original detector Eliminate the streaks and other video defects of other low cost receivers which use phase locked loop detection.
7. High selectivity option Permits tuning of all 24 channels without polarization rotation when the antenna horn is an Anderson DH-2 dual polarization unit.
8. Tuned aural option Standard audio subcarrier may be specified as 6.8 or 6.2 MHZ., or optional tuning is available from 5.5 to 7.5 MHZ for reception of all commonly used subcarriers.

SC-1 INSTRUCTIONS

The remote converter is normally attached directly to the "N" female connector of an Avantek low noise amplifier. Use a 120 degree L.N.A. in all locations within 500 miles of Black Hawk, S.D. and 100 degree at locations further from the center of the satcom F-1 "footprint".

Avantek L.N.A. is specified because it will provide satisfactory operation with the 12 volt D.C power available from the input "F" connector of the SR-1 receiver. The 12 volts D.C. passes through the SC-1 converter from the output red coded "F" connector to the SC-1 "N" male 4 GHZ input.

Gain of the L.N.A. will be about 44 dB with 12 volt power. If the 50 dB gain is required in a weak signal area, or if a different type of L.N.A. is used which must be powered with higher D.C. voltage (or A.C. or negative power), install a power block between the SC-1 converter and the low noise amplifier.

The power block should be connected to the L.N.A. with a short length (5ft.) of RG 8/U cable with "N" male connectors on both ends. The SC-1 is directly attached to the 4 GHZ output of the power block, and a power supply rated according to the L.N.A. current and voltage specifications connected to the block's power input. Again, the D.C. block and power supply are only required when the L.N.A. is not an Avantek or the signal is very weak.

CABLE INSTRUCTIONS

The 12 volt D.C. power for the SC-1 converter and L.N.A. and the U.H.F. all channel output are both carried by the same low cost cable.

RG-59 U may be used if the SC-1 is within 50 ft. of the SR-1 receiver. Use RG-6/U for 100 ft. or less and RG-11/U foam type for up to 200 ft.

When the half amp A.G.C. fuse is installed in the rear of the SR-1 receiver, the "F" connector provides 12 volts D.C. out and U.H.F. band input to the receiver.

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This D.C. is present both with the receiver turned on and off, so be sure there are no shorts in the cable and make all connections while the receiver is unplugged.

There are two "F" connectors for R.F. output from the SC-1 converter. The red coded connector is for power input and UHF out. Power is blocked from the other "F" output connector to permit operation of a second receiver or amplified splitter to several receivers.

If the unpowered "F" terminal is not to be used on the SC-1 converter, it need not be terminated.

SC-1 CONTROLS

After the feed cable is checked for shorts, connect it to the "F" terminal at the rear of the SC-1. Plug in the receiver and turn on the rotary switch at the lower right of the front panel. This also acts as a volume control for the internal speaker.

There are two push switches below the meter. The left one switches the pix tube heater off to conserve power while the monitor pix is not being observed. It is off at the "in" position, so must be out for the C.R.T. to operate.

The right switch turns off the tuning bar which appears in a vertical line with the tuned channel numbers.

The tuning line may be switched off during program viewing on the monitor by placing the switch in the out position. After setting the desired channel. There is a delay circuit on the line, and it will reappear between channels while tuning. It will also re-appear when there is no signal input to the receiver.

The channel tuning control is the recessed knob on the right side of the receiver near the front. Those SR-1 units with the aural subcarrier tuning option have an additional knob on the right side near the rear for aural tuning.

SC-1 METERING AND MONITOR

The relative signal metering of the SC-1 is for peaking of horn position and polarization and for comparing gain of antenna. It also gives a relative indication of the signal level of the different received channels.

Typical reading of the meter ranges from full scale (50) at satcom channel 2 to only slight indication (2 or 3) on satcom channel 24. These readings are with a 12 ft. spherical antenna near the satcom footprint center. The L.N.A. was 50 dB. gain and sixty foot RG-6/U cable. The readings will vary considerably with different cable loss and geographic locations, but should be of no concern if a satisfactory picture is received.

The built in monitor is intended normally for observation of the video and audio during installation and tuning. The video should be turned off (left push switch in) when the tuning is completed. This permits reduced power supply load and higher voltage to the converter and L.N.A.

Monitor horizontal and vertical controls are somewhat more critical than on a conventional receiver. This is especially true while observing test pattern signals. The SC-1 uses reduced I.F. channel width and this effects test pattern quality.

SC-1 OPTIONS

The rear mounted A.C. power supply may be removed by pushing forward on the slide lock at the right rear of the cabinet and sliding the supply to the right.

This enables installation of an optional D.C. power unit. The unit operates with six size "c" heavy duty fresh alkaline cells. They willonly operate the receiver for a few hours during testing, and decrease the gain for the L.N.A. and converter.

For longer term battery operation, a 12 volt cigar lighter plug is supplied with the battery pack option. This should be inserted in the right side of the battery pack.

Be sure the source is negative ground. If polarity is reversed the receiver, converter, and L.N.A. may all be damaged. If you are certain of the polarity, the plug may be directly inserted in the power pack plug point at the rear center of the SC-1, eliminating the 1.4 volts drop in the protective diodes of the pack.

Normally the SR-1 is provided for fixed 6.8 or 6.2 MHZ audio subcarrier operation as specified by the user.

For those using rotable antennas to view several satellite, a tuned subcarrier option is available. This permits single knob tuning of all subcarriers from 5.5 to 7.5 MHZ. These include the audio portion of telecasts and supplement services such as quality music programs.

The SR-1 "neighborhood" systems may wish to have the ability to tune all 20 active satcom channels from both polarizations, at all the receivers.

This is possible with some reduction in picture quality by two approaches :

1. Use an extra large receiving antenna with twice normal gain (and area). Then rotate the receiving horn half way between the two polarization peaks.
2. Use a large spherical antenna and order an optional Anderson DH-2 dual polarization horn. This will provide nearly full power to the L.N.A. from both polarizations when it is peaked at the position of either one.

There may be some indication of stronger adjacent channels on the receiver. This can usually be eliminated by careful tuning, "pulling" the automatic frequency control away from the offending channel.

Only the Anderson SC-1 is capable of simultaneous all channel reception. This is due to the unique original detector which reduces adjacent reception.

SC-1 ADJUSTMENT

Under certain conditions, the SC-1 conversion frequency may require field adjustment. This may occur when there is unusually high cable voltage drop from the receiver or when then shipping shock has caused misalignment.

If the SR-1 is unable to tune channel one, set the receiver tuning bar to the far left side of the C.R.T. screen. Then turn the small protruding screw on the side of the SC-1 converter. Screw it in only slightly (less than one turn) until channel one appears on the monitor. This raises the position of all channels on the tuning line numerical indicator.

If channel 24 can not be received set the tuning line to the extreme far right on the monitor, and adjust the frequency trimmer screw very slightly out until the channel appears.

OUTPUT JACKS

Three miniature jacks are located on the lower right center of the SR-1. The rear jack is labelled "V" and supplies video to a modulator or external monitor. output of the video jack is approximately one volt peak to peak at 100 ohms.

The center jack is labelled "A" and supplies audio to a modulator or monitor, output maximum is three volts peak to peak at 10,000 ohms. The audio output has standard pre-emphasis, so any pre-emphasis circuit within either an external modulator or monitor should be by-passed.

The front jack was a 10 volt power test point on units produced before May 3, 1981. This enables check of the internal voltage supplied to the output video amplifier, and was labelled "P".

On all units manufactured after June 1, 1981 the front miniature jack is labelled "E", and supplies audio output to the included high impedence earphone. This is for private listening when the video is being observed on either the SR-1 or another television receiver.

FIELD MAINTENANCE

No field maintenance should be attempted for either the SR-1 or SC-1, correct adjustment requires a spectrum analyzer and other non-portable equipment.

Units should be returned to the factory for any required repairs or adjustments. They should be double packed in well cushioned original factory cartons, and returned by priority (air) mail.

All parts are guaranteed for one year, and there is no charge for factory service for 90 days excepting in cases of lightning, overvoltage, shipping or tampering damaged.

The sealed SC-1 and chassis within the SR-1 are to be factory serviced only. Any opening of these chassis terminate all factory warranty and service responsibility.

MULTIPLE SYSTEMS

The SC-1 converter has two output "F" connectors. The red one is for 12 volt power input from the "master" SR-1 receiver. The other "F" connector has no D.C. connection. It may be connected to a second SC-1 receiver. The rear mounted .5 amp fuse should be removed from the second receiver. This prevents the 12 V.D.C. from entering the R.F. cable.

If service is desired to several receivers, connect the unpowered output of the SC-1 converter to a U.H.F. powered splitter or line amplifier with gain good power handling characteristics. The output may then be split off to several SC-1 receivers.

Be sure to remove the rear fuse of all receivers connected to any U.H.F. amplifier or splitter output. This is to prevent shorting the power supply through a grounded output of the amplifier.

Your SR-1 is by far the most flexible available in the world. It will provide years of quality viewing with more features than any low cost receiver.

Thank you for choosing our products. Please let us assist you in any way with your future requirements.